

CLAIMS

What is claimed is:

1. An adhesive compound comprising:
an adhesive base material; and
a plurality of shape memory alloy (SMA) particles dispersed within said adhesive base material to improve an impact resistance of said adhesive base material.
2. The adhesive compound of claim 1, wherein said SMA particles comprise NITINOL[®] alloy particles.
3. The adhesive compound of claim 2, wherein said NITINOL[®] alloy particles are provided in their austenitic phase.
4. The adhesive compound of claim 2, wherein said NITINOL[®] alloy particles are provided in their martensitic phase.
5. The adhesive compound of claim 2, wherein said NITINOL[®] alloy particles comprise a shape in accordance with at least one of the group of shapes comprising: a sphere; an oval; a cylinder.
6. The adhesive compound of claim 2, wherein said NITINOL[®] alloy particles comprise granules randomly interspersed within said adhesive base material.
7. The adhesive compound of claim 1, wherein said SMA particles comprise about 1.0% by volume of said adhesive base material.
8. The adhesive compound of claim 1, wherein said SMA particles comprise between about 1.0% and about 50% by volume of said adhesive base material.

9. The adhesive compound of claim 1, wherein said adhesive base material comprises a film, and said adhesive compound comprises an adhesive film.

10. The adhesive compound of claim 1, wherein said adhesive base material comprises an adhesive paste.

11. The adhesive compound of claim 1, wherein said SMA particles comprise a diameter of between about 50 microns and about .005 microns.

12. The adhesive compound of claim 1, wherein a size of said SMA particles comprises at least about 50 microns.

13. The adhesive compound of claim 1, wherein a size of said SMA particles comprises no more than about 0.005 micron.

14. An adhesive film comprising:
an adhesive base film; and
a plurality of shape memory alloy (SMA) particles randomly interspersed throughout said adhesive base film for toughening said adhesive base film.

15. The adhesive film of claim 14, wherein said SMA particles comprise NITINOL® alloy particles.

16. The adhesive film of claim 14, wherein at least a portion of said SMA particles comprise NITINOL® alloy particles in their martensitic phase.

17. The adhesive film of claim 14, wherein at least a portion of said SMA particles comprise NITINOL® alloy particles in their austenitic phase.

18. The adhesive film of claim 14, wherein said SMA particles comprise about 1.0% by volume of said adhesive base film.

19. The adhesive film of claim 14, wherein said SMA particles comprise between about 1.0% and about 50% by volume of said adhesive base film.

20. The adhesive film of claim 14, wherein said SMA particles comprise a shape in accordance with at least one of the group of shapes comprising: a sphere; an oval; and a cylinder.

21. The adhesive film of claim 14, wherein said SMA particles comprise a plurality of granules interspersed within said adhesive base film.

22. An adhesive paste comprising:
an adhesive compound having a consistency of a paste; and
a plurality of SMA particles interspersed within said adhesive compound to toughen said adhesive compound with negatively affecting an applicability of said compound to an external component.

23. The adhesive paste of claim 22, wherein said SMA particles comprise NITINOL[®] alloy particles.

24. The adhesive paste of claim 22, wherein said SMA particles comprise a diameter of about 50 microns to about .005 microns.

25. The adhesive paste of claim 23, wherein said NITINOL[®] alloy particles are provided in their austenitic phase.

26. The adhesive paste of claim 23, wherein said NITINOL[®] alloy particles are provided in their martensitic phase.

27. The adhesive paste of claim 22, wherein said SMA particles comprise a shape of at least one of the group of shapes comprising: a sphere, a cylinder and an oval.

28. The adhesive paste of claim 22, wherein said SMA particles comprise at least about 1.0% by volume of said adhesive compound.

29. The adhesive paste of claim 22, wherein said SMA particles comprise between about 1.0% to about 50% by volume of said adhesive compound.